

**REPORT**

to occupy the academic position:

"Professor"	<b>X</b>
"Associate Professor"	
	one of the academic positions indicated shall be marked with the sign "X"

**Candidates to occupy the position:**

1	Assoc. Prof.	Dr.	Daniela	Simeonova	Tsekova Nacheva	UCTM
№	academic position	scientific degree	name	middle name	last name	workplace

**Scientific area:**

4	Natural Sciences
code	name

**Professional area:**

4.2.	Chemical Sciences
code	name

**Scientific specialty:**

Organic Chemistry
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**The competition has been announced:**

68	13.08.2024 r.	Organic Chemistry	Faculty of Chemical Technology
in SG issue	date	for the needs of the Department	Faculty

**The report was written by:**

Prof.	Dr.	Dancho	Lyubenov	Danalev	UCTM
academic position	scientific degree	name	middle name	last name	workplace

**1. Report for the candidate:**

Assoc. Prof.	Dr.	Daniela	Simeonova	Tsekova Nacheva
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academic position	scientific degree	name	middle name	last name
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### 1.1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	<b>X</b>
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It must be filled in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.

The only candidate for the announced contest is Assoc. Prof. Dr. Daniela Simeonova Tsekova Nacheva. She obtained her Ph.D. degree in 2002 in the scientific specialty 01.05.05 "Physical Chemistry" at the Institute of Physical Chemistry of the Bulgarian Academy of Sciences. The candidate for the academic position of "professor" submits the following materials for participation in the contest:

- Indicator 1 - defended Ph.D. thesis on the topic "Initiation and growth of protein crystals - model studies with two proteins", which brings her an asset of the required **50** points
- Indicator 4 - Habilitation work - scientific publications in the journals that are referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus) Assoc. Prof. Tsekova has submitted **6** scientific publications, two of them in journals with Q1, one with Q2 and three with Q3. In the submitted publications, she is the second or consecutive author. These publications bring her an asset of **110** points under this indicator, which exceeds the required according to the Act for development of the academic staff of the Republic of Bulgaria of 100 points.
- Sum of indicators 5 to 10 - materials covering indicator 7 are presented, as follows: The total number of publications submitted for participation in the contest is **20**, where **4** scientific publications with Q1, **1** publication with Q2, **8** publications with Q3 and one chapter of a book under indicator 8, carrying a total point asset under indicator group D of **224** points, which exceeds the required minimum 200 points according to the Act for development of the academic staff of the Republic of Bulgaria.
- Sum of points under indicator 11 - 110 citations are presented, carrying a total point asset of **220** points, which significantly exceeds the required minimum of the Act for development of the academic staff of the Republic of Bulgaria of 100 points.
- Sum of indicators from 12 to the end:
- under indicator 13 Supervision of a successfully defended doctoral student, one defended doctoral student under the supervision of Assoc. Prof. Tsekova - Borislav Asparuhov Anchev, "Synthesis and characterization of new derivatives of L-aspartic acid with surface activity", 2020, is presented, which carries a point asset of **50** points;
- under indicator 14 Participation in a national scientific or educational project, participation in **4** projects with a total point asset of **40** points is presented;
- under indicator 16 Supervision of a national scientific or educational project, one project is presented, carrying a point asset of **20** points;
- under indicator 17 Supervision of the Bulgarian team in an international scientific or educational project, one project is presented, carrying a point asset of **50** points;

- under indicator 18 Funds attracted for projects headed by the candidate, the candidate provides evidence that brings her a point asset of **76** points.

Thus, the total number of points on indicators from 12 to the end is **236** points, which significantly exceeds the required according to the Act for development of the academic staff of the Republic of Bulgaria 150 points

All these scientometric data have contributed to Assoc. Prof. Tsekova having an *h*-index of 11, which is a very good certificate for her recognition in the scientific community working on similar topics.

It is evident from the brief analysis of the scientometric indicators of the candidate for the academic position of "professor" Assoc. Prof. Dr. Daniela Tsekova Nacheva that she fully meets, and in some cases significantly exceeds, the minimum requirements of the Act for development of the academic staff of the Republic of Bulgaria for holding the academic position of "professor" in the claimed professional field.

## 1.2. Relevance of scientific and / or applied research:

A) The research is relevant. Part of the research is pioneering (no results are known on the topic by other authors)	8 points	
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	6 points	<b>X</b>
C) Most of the research is relevant, but also some results are presented that have no scientific and / or applied value	4 points	
D) The smaller part of the research is relevant	2 points	
E) Research is not relevant	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the research must be substantiated.

As it can be seen from the materials presented in the contest by the only candidate Assoc. Prof. Dr. Daniela Tsekova Nacheva, her scientific interests and achievements are in the modern field of bioorganic chemistry, namely the study of physicochemical and biochemical properties of natural or newly synthesized organic compounds, derivatives of  $\alpha$ -amino acids. They can be divided into the following areas:

- Synthesis of new organic compounds with low molecular weight, belonging to the classes: peptides or peptidomimetics, and the study of their biological and physicochemical properties

- Study of the processes of formation of supramolecular complexes formed by low or high molecular weight derivatives of  $\alpha$ -amino acids

In the first area, research in two areas is presented:

1. Synthesis of peptides and their derivatives with potential activity against neurodegenerative diseases, mainly Alzheimer's disease and Multiple Sclerosis - publications A2, A3, A6, A7, A9, A10, A11, A12, A15. Publication A16 is a review covering different aspects of the same topic

2. Synthesis of new amphiphilic compounds based on amino acids and study of their biological and physicochemical properties – publications A1, A4, A5, A8, A13, A14, A17, A19, A20, B1

In the second direction, the presented developments are in publications A18 and A19

### 1.3. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	<b>X</b>
B) Realistic, but not of scientific and / or applied interest	4 points	
C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified

Biologically active compounds of natural origin such as amino acids, peptides, carbohydrates, etc. represent a promising alternative to existing drugs in practice. Unlike most chemotherapeutics used in medical practice, they have a number of advantages such as small size, easy passage through the blood-brain barrier and phospholipid membranes, natural biochemical mechanisms of elimination in the body, which is a prerequisite for the absence of side effects from their application to humans. The creation of new molecules based on natural biomolecules has the main goal of improving their pharmacokinetics and pharmacodynamics, as well as creating bioconjugates with multi-mechanism action against various diseases and targeted release. All this is in the context of the extremely modern targeted and multi-targeted therapy at present, which is evidence of the high scientific and applied level of the developments presented by Assoc. Prof. Tsekova for participation in the contest. The methods used for synthesis, characterization and determination of the biological activity and physicochemical parameters of the newly synthesized molecules are at the highest and most modern level. The scientific journals in which the results of the research have been published do not raise any doubts about their preparation and characterization.

### 1.4. Candidate research contributions:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	<b>X</b>
C) They are of scientific and / or applied interest	12 points	
D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given

		is marked with the sign "X"
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Contributions must be specified. The type of results achieved must be justified.
The main contributions can be summarized as follows: - synthesis of new organic compounds with low molecular weight, belonging to the classes: peptides or peptidomimetics; - study of the biological and physicochemical properties of new organic compounds with low molecular weight, belonging to the classes: peptides or peptidomimetics; - study of the processes of formation of supramolecular complexes formed by low or high molecular weight derivatives of $\alpha$ -amino acids - important structure-activity relationships conclusions as a result of the studies conducted on peptides or peptidomimetics with biological activity against neurodegenerative diseases.

### 1.5. Participation of the candidate in the achievement of the presented results:

A) The candidate has at least an equal participation in the submitted papers	8 points	
B) The candidate has at least an equal participation in most of the submitted papers	7 points	<b>X</b>
C) The candidate has a secondary participation in most of the submitted papers	4 points	
D) The candidate participation is unnoticeable	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items C or D is marked. In two of the presented publications, the candidate is in first position, in one book chapter she is in last and in ten she is in second position, which shows that she has at least equal participation of the first authors in more than half of the scientific papers submitted for participation in the contest. In the remaining seven scientific papers she is part of the team of the papers made. A main remark that I will note here is that there is no possibility for additional assessment of the individual contributions to the papers of the candidates for holding academic positions due to the unregulated need in the Act for development of the academic staff of the Republic of Bulgaria, to submit distribution protocols for participation in the Scientific Field of Natural Sciences, which does not always allow for a real assessment of the candidate's contributions to each of the presented articles.
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### 1.6 Pedagogical activity:

A) The candidate has effective and sufficient pedagogical activity at the university. The textbooks issued are modern and useful (they meet the requirements of the Regulations).	8 points	
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The work with undergraduate and doctoral students is at a high professional level.		
B) The candidate has sufficient pedagogical activity at the university. The textbooks issued satisfy the requirements of the Regulations.	6 points	<b>X</b>
C) The pedagogical activity and / or textbooks issued are insufficient (do not meet the requirements of the Regulations)	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items B or C is marked.

### 1.7. Critical notes:

A) Lack of critical notes	8 points	<b>X</b>
B) Critical notes of a technical nature	7 points	
C) Critical notes that would partially improve the results achieved in a small part of the research	5 points	
D) Critical notes that would partially improve the results achieved in most of the research	3 points	
E) Significant critical notes	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the answers C, D or E is marked.
I have no critical remarks about the candidate regarding her scientific production and academic commitment. I have known Assoc. Prof. Daniela Tsekova since she joined the Department of Organic Chemistry at the UCTM and from our joint work on several scientific projects. I believe that she is an extremely responsible and erudite scientist with high scientific achievements and excellent theoretical training in the field of her scientific interests, namely bioorganic chemistry and chemistry of natural physiologically active substances, which are part of the requirements in the contest for the academic position of "professor". She also has a good position in the international scientific community, which is evidenced by her numerous collaborations with foreign scientists, her postdoctoral

specializations, as well as the international and national projects she has led. She is also a member of several national and international scientific organizations in the field of her scientific interest, such as the Bulgarian and European Peptide Society. As the president of the Bulgarian Peptide Society and national representative in the European Peptide Society, I can confidently say that Assoc. Prof. Tsekova always participates in the scientific and social forums organized by both associations and the scientific works that she presents are of an extremely high scientific level and arouse interest both nationally and internationally.

### 1.8. Conclusion

A) The evaluation of the candidate's activity is <b>POSITIVE</b>	This evaluation is assigned to a total number of at least 50 points	<b>X</b>
B) The evaluation of the candidate's activity is <b>NEGATIVE</b>	This evaluation is assigned to a total number below 50 points	
		one of the answers given is marked with the sign "X"

To be filled in if requested by the member of the scientific jury

I would like the candidate for the academic position of "professor" to provide some future directions in which she intends to develop her scientific activities, related to the field or similar fields of higher education for which the competition has been announced.

11.12.2024	The report was written by:	
date		signature